

Notice of Allowability

Application No.

09/757,095

Examiner

John B. Vigushin

Applicant(s)

GORDON, JAMES H.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed 27 March 2003.
2. ☒ The allowed claim(s) is/are 1-10.
3. ☒ The drawings filed on 24 May 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - (a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No. _____.
 - (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
 - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet.

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1 <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 2 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 4 <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____ |
| 5 <input type="checkbox"/> Information Disclosure Statements (PTO-1449), Paper No. _____ | 6 <input type="checkbox"/> Examiner's Amendment/Comment |
| 7 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9 <input type="checkbox"/> Other |

DETAILED ACTION

1. The present Office Action is responsive to Applicant's Amendment filed March 27, 2003. The Examiner acknowledges the amendments to Claims 1, 2 and 8. Claims 1-10 remain pending in the instant amended Application.

Allowable Subject Matter

2. Claims 1-10 have been allowed.
3. The following is an examiner's statement of reasons for allowance:

As to Claims 1-5, patentability resides in **the combination of** *a plurality of internal layers between the top layer and the bottom layer and carrying thereon printed circuit lines connecting the array of contact elements with the connector **and** the top and bottom layers each being a ground plane*, in further combination with the other limitations of base Claim 1.

As to Claims 6-9, patentability resides in *a switch unit for connecting each of the printed circuit lines to ground except for the line connected by the multiplexer to the receiving unit*, in combination with the other limitations of base Claim 6.

As to Claim 10, patentability resides in *connecting all the printed circuit lines except the selected line to ground*, in combination with the other limitations of the claim.

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a) Baran (US 4,954,929) discloses a multilayer PCB 100 with edge contacts 142 on surface layer 150 connected to external connector 130, PCB 100 having internal layers that include layer 152 which supports a ground plane (Figs. 2 and 10; col.5: 61-65). Baran does not teach a top and bottom layer, each being a ground plane.

b) Inagawa (US 5,790,383) discloses a two-sided circuit board 8 with external connectors 9 and both ground and power patterns on the bottom surface of board 8, or alternatively, if the board 8 is a multilayer board, the power and ground planes may be separate layers (Figs. 1 and 2; col.3: 18-23). Inagawa does not teach a top and bottom layer, each being a ground plane.

c) Arai et al. (US 6,040,985) discloses, in Figs. 1, 3, 4 and 8, a multilayer board P with edge contacts connected to an external connector 100, the board P having internal layers that include layer 64 supporting a ground plane (col.3: 45-53). Arai et al. does not teach a top and bottom layer, each being a ground plane.

d) Robbins et al. (US 6,365,839 B1) discloses a multilayer PCB with edge contacts 204 and plug connectors 214 (Fig. 2; col.3: 37-40 and 47-49), the PCB having internal layers that include stepped ground patterns (Fig. 3; col.4: 5-13). Robbins et al. does not teach a top and bottom layer, each being a ground plane.

e) Okubora et al. (US 6,528,732 B1) discloses, in Figs. 7F and 7G: a multilayer board forming a band-pass filter with top and bottom layers 35c and 31c, each being a

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ground plane; a plurality of internal layers 32 and 36 (layer 38 is an adhesive layer joining internal layers 32 and 36) between the top and bottom layers 35c and 31c, the internal layers 32 and 36 carrying thereon printed circuit lines 35a, 37a, 31a and 33a (col.7: 20-35) forming a resonant circuit (Figs. 5A,B; col.5: 17-25). Okubora et al. does not teach or suggest an array of contact elements located at one end of the band-pass filter board and a connector at an opposite end of the band-pass filter board being interconnected by the resonant circuit lines 35a, 37a, 31a and 33a on the internal layers 32 and 36.

f) Ellis (Re. 35,884) was previously cited and described by the Examiner in the previous Office Action of October 07, 2002 (see p.5, section 10). The Examiner wishes to now revise the description of the Ellis reference. Upon review of Ellis, the Examiner now recognizes that elements 120a and 120b are not contact elements but are anode portions that attract and direct the electrons, ions, etc. through the microchannel plates 52A,B (col.3: 23-35; col.5: 15-20). Accordingly, the following revised description of Ellis replaces the above-cited previous description: Ellis discloses anode portions 120a and 120b located at one end of a printed circuit board 54 for attracting and directing the electrons, ions, etc. through the microchannel plates 52A,B (col.3: 23-35; col.5: 15-20); a connector 60 at an end opposite the anode portions 120a and 120b (col.4: 35-40); a top and bottom layer each being a ground plane 74 (Fig. 7; co.4: 26-29); at least one internal layer between the top layer 74 and bottom layer 74 (col.4: 35-40) and carrying thereon printed circuit lines connecting the anode portions 120a and 120b with the connector (col.4: 26-40).

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John B. Vigushin whose telephone number is 703-308-1205. The examiner can normally be reached on 8:30AM-5:00PM Mo-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on 703-305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7382 for regular communications and 703-308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

John B. Vigushin
Examiner
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jbv
July 19, 2003



DAVID L. TALBOTT
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